

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

WILLIAM R. FINCH

Serial No.: 09/844,747

Filed: APRIL 25, 2001

For: METHOD AND APPARATUS MULTI-  
PHY COMMUNICATION WITHOUT AN  
ATM BUS MASTER

Group Art Unit: 2153

Examiner: JOHN R. BRANCOLINI

Conf. No.: 2270

Atty. Dkt.: 2069.010500/TT4038

CUSTOMER NO.: 23720

**AMENDED APPEAL BRIEF**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Appellant files this Amended Appeal Brief in response to the Notice of Non-Compliant Appeal Brief mailed April 10, 2007. The one-month response date is May 10, 2007. This Amended Appeal Brief is being electronically filed on May 10, 2007, therefore, it is timely filed.

If an extension of time is required to enable this paper to be timely filed and there is no separate Petition for Extension of Time filed herewith, this paper is to be construed as also constituting a Petition for Extension of Time Under 37 CFR § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

No fee is believed due as a result of this filing, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason, the Commissioner is authorized to deduct said fees from Legerity, Inc., Deposit Account No. 50-1591/TT4038.<sup>1</sup>

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<sup>1</sup> In the event the monies in that account are insufficient, the Commissioner is authorized to withdraw said fees from Williams, Morgan & Amerson, P.C. Deposit Account No. 50-0786/2069.010500/TT4038.

## **I. REAL PARTY IN INTEREST**

The present application is owned by Legerity, Inc.

## **II. RELATED APPEALS AND INTERFERENCES**

Appellant is not aware of any related appeals and/or interferences that might affect the outcome of this proceeding.

## **III. STATUS OF CLAIMS**

Claims 1-35 remain pending in this application.

The Examiner rejected claims 1-3, 5, 25-27 and 29 under 35 U.S.C. § 102(b) as being unpatentable by U.S. Patent No.5,412,783 (*Skokan*). Additionally, the Examiner rejected claims 4, 6-24, 28 and 30-35 under 35 U.S.C. § 103(a) as being unpatentable over *Skokan*, as applied to claims 1-3, 5, 25-27 and 29, and further in view of U.S. Patent No. 6,618,376 (*Rumer*).

## **IV. STATUS OF AMENDMENTS**

After the Final Rejections, no other amendments were made to any other claims.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention is directed to provide a handshaking process for enabling exchange of data between devices. As called for in independent claim 1, the present invention provides a communication system (10) that includes a bus (20), which includes at least one data line and control lines (120, 140, 150, 160, or 170) that are coupled to first and second devices (40, 30). The system (10) also includes a handshaking unit (50). The data line is coupled between the first and second devices (40, 30). The handshaking unit (50) is coupled to the control lines (120, 140, 150, 160, or 170) of the bus (20) and is adapted to determine if the first and second devices (40, 30) are capable of completing a data transfer and enable the first and second devices (40, 30) to facilitate the data transfer. *See* page 4, lines 1-7; page 5, line 18-page 7, line 3.

Another aspect of the present invention is seen in a communication system for enabling exchange of data between devices, as called for by independent claim 13. The communication system includes a bus (20), which includes at least one data line. The communication system also includes a first device (40) coupled to the bus (20) and having a Universal Test & Operations Interface for ATM (UTOPIA) interface for communicating over the bus (20). The communication system also includes a second device (30) coupled to the bus and having a UTOPIA interface for communicating over the bus, the data line being coupled between the first device (40) and the second device (30). The communication system also includes a handshaking unit (50) coupled to the bus (20) and being adapted to provide handshaking signals to the first and second devices (40, 30) to complete a data transfer between the first and second devices (40, 30). *See* page 4, lines 1-7; page 5, line 18-page 7, line 3.

Another aspect of the present invention is seen in a method for interfacing first and second devices (40, 30) coupled to a bus (20), as called for by independent claim 25. The bus (20) has at least one data line coupled to the first and second devices (40, 30) and control lines (120, 140, 150, 160, or 170). The method includes determining if the first and second devices (40, 30) are capable of completing a data transfer based on the control lines (120, 140, 150, 160, or 170); providing handshaking signals on the control lines (120, 140, 150, 160, or 170) to enable the first and second devices (40, 30); and transferring the data over the data line in response to the handshaking signals. *See* page 4, lines 8-13; page 8, line 4-page 9, line 13.

Embodiments provide for the connecting of multiple PHY devices to a common bus without the need for an expensive and complex ATM master. The handshaking unit 50 provides handshaking signals to make it appear to the PHY devices that they are transferring their data to an ATM master, while in actuality, they are transferring data directly to another PHY device. *See* Specification, page 10, lines 1-5.

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Whether claims 1-3, 5, 25-27 and 29 are patentable under U.S. Patent No.5,412,783 (*Skokan*); and
2. Whether claims 4, 6-24, 28 and 30-35 are patentable under *Skokan*, as applied to claims 1-3, 5, 25-27 and 29, and further in view of U.S. Patent No. 6,618,376 (*Rumer*).

## **VII. ARGUMENT**

In the Notice of Non-Compliant Appeal Brief mailed April 10, 2007, the Examiner asserted that the Brief does not contain a concise explanation of the subject matter of each of the independent claims. Appellant has amended the Summary section to address the Examiner's concerns. A concise explanation of all of the independent claims, along with references to the specification by page and line number, and to the drawings as well as to reference numbers, have been provided. The subject matter relating to all of the claims on appeal have been defined in each of the claims on appeal, referring to the specification by page and line number. Therefore, the Appeal Brief is in full compliance with 37 C.F.R. 41.37. Accordingly, the present Amended Appeal Brief is in Compliance with the Patent Rules and Laws.

The present invention is directed to a novel system of handshaking between a first device and a second device. A communication system associated with the present invention includes a bus that may include at least one data line and control lines. A first device and a second device are coupled to a bus. The present invention also provides for a handshaking unit coupled to the control lines of the bus. The handshaking unit is capable of determining whether the first and second devices are capable of completing the data transfer and enabling the first and the second devices to facilitate a data transfer. The Examiner relies heavily on U.S. Patent No. 5,412,783 (*Skokan*). *Skokan* is directed to providing a handshaking signal that is encoded to facilitate

transfer of the handshaking signal from a first network segment to a second network segment. The handshaking signals disclosed by **Skokan** are not coupled to the control lines of a bus, in contrast to claims of the present invention.

**Skokan** discloses that the handshaking signal is part of a set of timing signals, wherein the control lines are on a separate line from the handshaking signal. This is in contrast to the claims of the present invention, which calls for the handshaking unit being coupled to the control lines of the bus upon which the handshaking signals may reside. Therefore, not only is it true that **Skokan** does not disclose the handshaking signal being coupled to the control lines up above, as called for by claim 1 of the present invention, **Skokan** actually discloses the opposite.

Further, **Skokan** simply does not disclose a handshaking unit. **Skokan** discloses coding, converting data into a serial string, de-serializing the data and decoding, which are functions performed by different units, and need to take place before the communication may be facilitated. There are many disadvantages regarding efficiency, etc., for having to utilize multiple device arrangements for providing direct communications between devices on a bus. **Skokan** has many of these disadvantages. The background of the present application specifically addresses the disadvantages that are present in **Skokan**. Therefore, this bolsters the argument that **Skokan** clearly does not disclose all of the elements of the claims of the present invention, particularly since the claimed invention is directed to overcome many disadvantages present in **Skokan**.

**Skokan** is directed to an asynchronous handshake signal being encoded to facilitate data with a transfer of the handshaking signal from the first network segment to a second network segment. Specifically, one reason that **Skokan** does not anticipate or make obvious elements of the claimed invention is that the timing signals of **Skokan**, which may carry a handshaking signal is entirely different from the control signal disclosed by **Skokan**. Therefore, the Examiner

erred in equating the separate timing and control signals and interpreting them to satisfy the elements associated with the utilization of the bus. **Skokan** could not possibly satisfy this element since not only does **Skokan** lack the disclosure of a handshaking unit, **Skokan** affirmatively asserts that any handshaking signal is not present on a control signal. Therefore, there are various reasons why claims of the present invention are not taught, disclosed or suggested by **Skokan**.

The specific claims of the present invention are discussed below.

**A. Claims 1-3, 5, 25-27 And 29 Are Not anticipated Under 35 U.S.C. § 102(b) by U.S. Patent No. 5,412,783 (Skokan).**

The Examiner rejected claims 1-3, 5, 25-27 and 29 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,412,783 (**Skokan**). Appellant respectfully traverses this rejection.

The disclosure of **Skokan** is directed to providing a handshaking signal that is encoded to facilitate transfer of the handshaking signal from a first network segment to a second network segment. The bus disclosed in **Skokan** contains separate control lines and does not carry handshaking signals, which, as described above, is in contrast to claims of the present invention.

In the Final Office Action dated December 14, 2005, the Examiner attempts to rebut Appellant's arguments by referring to Figures 1 and 2 of **Skokan**. However, as described in further detail below, Figures 1 and 2 of **Skokan** simply do not disclose a handshaking unit that is coupled to the control line of a bus and being adapted to determine if a first device and a second device that are coupled to the bus are capable of completing a data transfer. In fact, Figures 1 and 2 simply do not disclose a handshaking unit whatsoever. Further, **Skokan** affirmatively discloses that the handshaking signals are not coupled to the control lines since the handshaking signals are part of the timing signals, *i.e.*, the control lines are on a separate line and the

handshaking signal is yet another separate line. Therefore, **Skokan** clearly does not anticipate or make obvious all of the elements of the claims of the present invention.

Contrary to Examiner's assertion in the Final Office Action dated December 14, 2005, Appellant respectfully asserts that **Skokan** does not teach, disclose, or suggest all of the elements of claim 1 of the present invention. Simply because **Skokan** discloses a handshaking signal, it does not follow that a handshaking unit that is coupled to the control line so the bus called for by claim 1 of the present invention is disclosed or made obvious. **Skokan** discloses an asynchronous handshake signal being encoded to facilitate transfer of the asynchronous handshake signal from a first network segment to a second network segment. **Skokan** discloses a network bus segment 10 and a network bus segment 30 being interconnected by a network extender 40. The network bus segment 10 is associated with one portion of a network and it communicates with the network bus segment 30, which is associated with another portion of the network via a network extender 40. See column 3, lines 28-34. **Skokan** discloses that timing signals may be transmitted on various data lines 11 on each of the network bus segments 10, 30, which may include a handshaking signal. See column 3, lines 33-37. **Skokan** also discloses that the timing signals 12 are sent on a separate line; wherein the timing signal includes the handshaking signals. *Id.* **Skokan** discloses that the bus segment 10 contains separate control lines 13, on which the handshaking signals are not sent. See column 3, lines 35-43. Therefore, it is abundantly clear from **Skokan** that the handshaking signals are not coupled to the control lines since the handshaking signal is part of the timing signals on the line 12. In other words, **Skokan** discloses that the control lines are on a separate line 13 and the handshaking signal is on another line (*i.e.*, data lines 11). See column 3, lines 34-41. In contrast to **Skokan**, the handshaking unit of claim 1 is coupled to the control lines of the bus. Therefore, **Skokan** directs one away from

the subject matter of claim 1. **Skokan** simply does not disclose a handshaking unit being coupled to the control lines of the bus, as called for by claim 1 of the present invention.

Additionally, **Skokan** clearly does not disclose a handshaking unit, as called for by claim 1 of the present invention. **Skokan** merely discloses that the timing signals on the data line 11 may include a handshaking signal, wherein claim 1 calls for a handshaking unit to be coupled to the control lines of the bus upon which a first device and a second device are coupled, which is clearly not disclosed or suggested by **Skokan**. **Skokan** does not disclose a handshaking unit, much less a handshaking unit providing a handshaking signal on a control line of a bus.

Furthermore, claim 1 calls for the first and second device being coupled to a bus, where a handshaking is coupled to the control lines of the bus to determine if the first and second devices are capable of completing a data transfer and enabling the first and second devices to facilitate the data transfer. **Skokan** clearly does not teach a handshaking unit capable of enabling the first and second devices to facilitate the data transfer. Upon close examination of **Skokan**, it is revealed that there is no handshaking unit. Further, the handshaking signal, along with the timing signal, are sent to a coding device 14 and 15 and then converted to a serial stream using the serializer 19. The serial stream is then converted by deserializer 43, and then decoded by the decoders 34 and 35. *See* Figure 2, column 3, lines 60-68. In contrast to **Skokan**, the present invention overcomes some of the disadvantages of the subject matter of **Skokan**. For example, in the background section of the present invention, it is disclosed that one limitation of the prior art multiple physical device arrangement is that there is no efficient capability of providing direct communication between physical devices on the bus. *See* page 3, lines 19-20 of the present invention. It is respectfully submitted that **Skokan** falls in this category since coding, converting data to a serial stream, deserializing, and decoding relate to different units, the usage of which has the disadvantages discussed in the present patent application. Many of these disadvantages



are overcome by the handshaking unit of the claims being coupled to the control lines of the bus that interconnects a first device and a second device, where enabling of data transfer between the first device and the second device may be facilitated by the handshaking unit. Therefore, some of the disadvantages of *Skokan* are overcome by the present invention, although the claims are not limited as such. Hence, various disadvantages of *Skokan* may be overcome by employing various features of the present invention. Accordingly, those skilled in the art would not be taught the subject matter of various elements of the present invention. Therefore, *Skokan* does not teach, disclose, or suggest all of the elements of the present invention.

In addition, as described above, *Skokan* clearly does not disclose a handshaking unit coupled to the control lines of the bus interconnecting the first and second devices. Furthermore, *Skokan* actually teaches away from the subject matter of the claims, since the handshaking signals in *Skokan*, along with the other timing signals, are on data lines (i.e., line 12), wherein the control lines are on line 13, which is a separate line. However, other factors, such as the lack of a handshaking unit being coupled to the control lines of the bus, which is capable of enabling the first and second devices to facilitate the data transfer, is clearly not taught, disclosed or suggested by *Skokan*. Therefore, all of the elements of claim 1 of the present invention are not taught, disclosed, or suggested by *Skokan*, and therefore, claim 1 of the present invention is allowable for at least the reasons cited herein.

Furthermore, independent claim 13, which calls for a communications system that includes a bus being connected to a first and a second device, as well as a handshaking unit coupled to the bus to facilitate a data transfer between the first and second devices, is also not anticipated by *Skokan* for at least the reasons cited above. *Skokan* clearly does not disclose a handshaking unit coupled to the control lines of the bus interconnecting the first and second

devices. Accordingly, **Skokan** does not teach disclose, or suggest all of the elements of claim 13 of the present invention.

Additionally, claim 25, which calls for determining if the first and second devices are capable of completing a data transfer, providing handshaking signals to enable the first and second devices, and transferring the data in response to the handshaking signals, is also not anticipated by **Skokan** for at least the reasons cited above. **Skokan** clearly does not disclose providing handshaking signal on the control lines. As described herein, **Skokan** teaches the opposite, since **Skokan** discloses handshaking signals on separate lines. Accordingly, **Skokan** does not teach disclose, or suggest all of the elements of claim 25 of the present invention. Therefore, independent claims 1, 13, and 25 of the present invention are allowable for at least the reasons provided herein.

Independent claims 1, 13, and 25 are allowable for at least the reasons stated above. Dependent claims 2-12, 14-24, and 26-35, which depend from independent claims 1, 13, and 25, respectively are also now considered to be patentable in light of the above-presented arguments.

**B. Claims 4, 6-24, 28 and 30-35 Are Not Rendered Unpatentable under 35 U.S.C. § 103(a) by Skokan in view of U.S. Patent No. 56,618,376 (Rumer).**

The Examiner rejected claims 4, 6-24, 28 and 30-35 under 35 U.S.C. §103(a) as being unpatentable over **Skokan**, as applied to claims 1-3, 5, 25-27 and 29 above, and in further view of U.S. Patent No. 6,618,376 (**Rumer**). Appellant respectfully traverses this rejection.

In the Final Office Action dated December 14, 2005, the Examiner asserted that the combination of **Skokan** and **Rumer** discloses a communication interface for establishing communications across shared communication bus and, therefore, it would have been obvious to those skilled in the art to incorporate the teachings of **Rumer** to the communication interface of

**Skokan.** Appellant respectfully disagrees. The Examiner is unable to establish a *prima facie* case of obviousness based upon **Skokan** and **Rumer**.

As the Examiner well knows, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on appellant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the

suggestion and the expectation of success must be founded in the prior art, not in the Appellant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991; *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

A recent Federal Circuit case makes it crystal clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35.

Appellant respectfully asserts that the combination of ***Skokan*** and ***Rumer*** do not suggest, teach, or make obvious all of the elements of claims 4, 6-24, 28 and 30-35 of the present invention. The Examiner stated that ***Skokan*** did not explicitly mention UTOPIA interfaces and uses ***Rumer*** to make obvious the UTOPIA interfaces. However, as described above, ***Skokan*** is missing much more than the UTOPIA interfaces, therefore, merely adding the UTOPIA interface of ***Rumer***, still does not teach, disclose, or suggest all of the elements of claims 4, 6-24, 28 and 30-35, which depend from the independent claims that have elements clearly not disclosed by ***Skokan*** (as described above), ***Rumer***, and/or their combination. ***Rumer*** merely discloses a communication bus snoop switch to receive ATM cells from a number of ATM physical layer interfaces across a common inbound bus. ***Rumer*** clearly does not disclose or make obvious various elements, such as the handshaking unit coupled to the control lines of the bus that interconnects the first and second devices, which as described above, is also not disclosed by ***Skokan***. ***Rumer*** does not make for the deficit of ***Skokan***. Therefore, the combination of ***Skokan*** and ***Rumer*** do not disclose or make obvious various elements of claims 4, 6-24, 28 and 30-35 of the present invention.

Furthermore, Appellant respectfully submits that there is insufficient motivation in **Skokan** and/or **Rumer** to prompt one skilled in the art to combine the prior art disclosures to make obvious all of the elements of claims 4, 6-24, 28 and 30-35 of the present invention. In other words, the Examiner has not provided sufficient evidence or arguments to illustrate that sufficient motivation is found within the cited prior art that would direct one of those skilled in the art to modify the prior art to make obvious all of the elements of claims 4, 6-24, 28 and 30-35 of the present invention. For example, **Skokan** is directed to an asynchronous handshake signal being encoded to facilitate transfer of the handshake signal from a first network segment to a second network segment. In contrast, **Rumer** is directed to an ATM UTOPIA bus snooper switch that is capable of receiving queue of the number of available slots corresponding to the physical layers of the ATM interfaces. See col. 3, lines 40-46 and col. 4, lines 39-48. Those skilled in the art would not be motivated by these disclosures to combine them to make obvious all of the elements of claims 4, 6-24, 28 and 30-35 of the present invention. The Examiner has not provided sufficient evidence or arguments to the contrary. Therefore, Appellant respectfully submits that those skilled in the art would not have combined **Rumer** and **Skokan** to make obvious all of the elements of claims 4, 6-24, 28 and 30-35 of the present invention. Furthermore, as described above, *arguendo* even if **Rumer** and **Skokan** were combined, their combination still would not make obvious all of the elements of claims 4, 6-24, 28 and 30-35 of the present invention. Therefore, claims 4, 6-24, 28 and 30-35 of the present invention, are allowable for at least the reasons cited herein.

Clearly, the examiner has failed to show that even when **Skokan** and **Rumer** are combined, all of the elements of the claims of the present invention are not made obvious. Further, there is no suggestion or motivation, either in **Skokan** and **Rumer**, or in the knowledge generally available to one of ordinary skill in the art, to modify **Skokan** and **Rumer** or to

combine the reference teachings. Additionally, the Examiner has not provided evidence relating to any likelihood of success when the cited prior art references are combined. There is no evidence combining the subject matter of an asynchronous handshake signal being encoded to facilitate transfer of the handshake signal from a first network segment to a second network segment (i.e., **Skokan**), with the subject matter of an ATM UTOPIA bus snooper switch that is capable of receiving queue of the number of available slots corresponding to the physical layers of the ATM interfaces (**Rumer**) would provide successful results. Accordingly, the Examiner has failed to show or argue any issues relating to an expectation of reasonable success if **Skokan** and **Rumer** were combined. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness of claims 6-24, 28 and 30-35. Hence, claims 6-24, 28 and 30-35 are also allowable for at least the reasons cited herein.

## **VIII. CLAIMS APPENDIX**

The claims currently under consideration, *i.e.*, claims 1-35, are listed in the Claims Appendix attached hereto.

## **IX. EVIDENCE APPENDIX**

There is no evidence relied upon in this Appeal with respect to this section.

## **X. RELATED PROCEEDINGS APPENDIX**

There are no related appeals and/or interferences that might affect the outcome of this proceeding. Reconsideration of the present application is respectfully requested.

In view of the foregoing, it is respectfully submitted that the Examiner erred in not allowing all claims (claims 1-35) pending in the present application over the prior art of record.

**The undersigned attorney may be contacted at (713) 934-4069 with respect to any questions, comments, or suggestions relating to this appeal.**

<p>Date: <u>May 10, 2007</u></p>	<p>Respectfully submitted,</p> <p>WILLIAMS, MORGAN &amp; AMERSON, P.C. CUSTOMER NO. 23720</p> <p>By: <u>          /Jaison C. John/          </u> Jaison C. John, Reg. 50,737 10333 Richmond, Suite 1100 Houston, Texas 77042 (713) 934-4069 (713) 934-7011 (facsimile) ATTORNEY FOR APPELLANT(S)</p>
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## **CLAIMS APPENDIX**

1. (Original) A communication system, comprising:  
a bus including at least one data line and control lines;  
a first device coupled to the bus;  
a second device coupled to the bus, the data line being coupled between the first and second devices; and  
a handshaking unit coupled to the control lines of the bus and being adapted to determine if the first and second devices are capable of completing a data transfer and enable the first and second devices to facilitate the data transfer.
2. (Original) The communication system of claim 1, wherein the control lines comprise a first data available line coupled to the first device and a second data available line coupled to the second device, and the handshaking unit is adapted to determine that the first and second devices are capable of completing the data transfer in response to the first and second data available lines being asserted.
3. (Original) The communication system of claim 2, wherein the control lines include a first enable line coupled to the first device and a second enable line coupled to the second device, and the handshaking unit is adapted to assert the first and second enable lines to facilitate the data transfer.
4. (Original) The communication system of claim 1, wherein the first and second devices include UTOPIA interfaces for communicating data over the bus.



5. (Original) The communication system of claim 1, wherein the control lines include a clock line and the handshaking unit is adapted to provide a clock signal to the first and second devices on the clock line.

6. (Original) The communication system of claim 1, wherein the first and second devices comprise a first pair of devices, and the communication system further comprises a plurality of pairs of devices, each pair being configured to respond to a shared address.

7. (Original) The communication system of claim 6, wherein the handshaking unit is adapted to sequentially poll the pairs of devices to determine if both of the devices in a particular pair are capable of completing the data transfer.

8. (Original) The communication system of claim 7, wherein the control lines include an address line and the handshaking unit is adapted to drive an address on the address line to poll the particular pair of devices.

9. (Original) The communication system of claim 1, wherein the first and second devices are adapted to communicate data arranged in cells.

10. (Original) The communication system of claim 9, wherein each cell comprises an asynchronous transfer mode (ATM) cell.

11. (Original) The communication system of claim 1, wherein the first device comprises interface device and the second device comprises a modem.

12. (Original) The communication system of claim 6, further comprising:  
an interface device having a plurality of ports; and  
a plurality of modems, wherein each pair of devices includes one of the ports and one of the modems.

13. (Previously Presented) A communication system, comprising:  
a bus including at least one data line;  
a first device coupled to the bus and having a Universal Test & Operations Interface for ATM (UTOPIA) interface for communicating over the bus;  
a second device coupled to the bus and having a UTOPIA interface for communicating over the bus, the data line being coupled between the first device and the second device; and  
a handshaking unit coupled to the bus and being adapted to provide handshaking signals to the first and second devices to complete a data transfer between the first and second devices.

14. (Original) The communication system of claim 13, wherein bus includes control lines, and the handshaking unit is adapted to provide the handshaking signals over the control lines without interfacing with the data line.

15. (Original) The communication system of claim 13, wherein the control lines comprise a first data available line coupled to the first device and a second data available line coupled to the second device, and the handshaking unit is adapted to determine if the first and second devices are capable of completing the data transfer in response to the first and second data available lines being asserted.

16. (Original) The communication system of claim 15, wherein the control lines include a first enable line coupled to the first device and a second enable line coupled to the second device, and the handshaking unit is adapted to assert the first and second enable lines to facilitate the data transfer.

17. (Original) The communication system of claim 14, wherein the control lines include a clock line and the handshaking unit is adapted to provide a clock signal to the first and second devices on the clock line.

18. (Original) The communication system of claim 14, wherein the first and second devices comprise a first pair of devices, and the communication system further comprises a plurality of pairs of devices, each pair being configured to respond to a shared address.

19. (Original) The communication system of claim 18, wherein the handshaking unit is adapted to sequentially poll the pairs of devices to determine if both of the devices in a particular pair are capable of completing the data transfer.

20. (Original) The communication system of claim 17, wherein the control lines include an address line and the handshaking unit is adapted to drive an address on the address line to poll the particular pair of devices.

21. (Original) The communication system of claim 13, wherein the first and second devices are adapted to communicate data arranged in cells.

22. (Original) The communication system of claim 21, wherein each cell comprises an asynchronous transfer mode (ATM) cell.

23. (Original) The communication system of claim 13, wherein the first device comprises interface device and the second device comprises a modem.

24. (Original) The communication system of claim 18, further comprising:  
an interface device having a plurality of ports; and  
a plurality of modems, wherein each pair of devices includes one of the ports and one of the modems.

25. (Original) A method for interfacing first and second devices coupled to a bus having at least one data line coupled to the first and second devices and control lines, the method comprising:

determining if the first and second devices are capable of completing a data transfer  
based on the control lines;

providing handshaking signals on the control lines to enable the first and second devices;  
and

transferring the data over the data line in response to the handshaking signals.

26. (Original) The method of claim 25, wherein the control lines comprise a first data available line coupled to the first device and a second data available line coupled to the second device, and determining if the first and second devices are capable of completing the data transfer comprises determining if the first and second data available lines are in an asserted state.

27. (Original) The method of claim 26, wherein the control lines include a first enable line coupled to the first device and a second enable line coupled to the second device, and providing the handshaking signals comprises asserting the first and second enable lines to facilitate the data transfer.

28. (Previously Presented) The method of claim 25, further comprising communicating with the first and second devices over the bus using a Universal Test & Operations Interface for ATM (UTOPIA) interface.

29. (Original) The method of claim 25, wherein the control lines include a clock line and providing the handshaking signals comprises providing a clock signal to the first and second devices on the clock line.

30. (Original) The method of claim 25, wherein the first and second devices comprise a first pair of devices, and the method further comprises:

providing a plurality of pairs of devices; and  
configuring each pair to respond to a shared address.

31. (Original) The method of claim 30, further comprising sequentially polling the pairs of devices to determine if both of the devices in a particular pair are capable of completing the data transfer.

32. (Original) The method of claim 31, wherein the control lines include an address line and the method further comprises driving an address on the address line to poll the particular pair of devices.

33. (Original) The method of claim 25, wherein transferring the data comprises transferring the data arranged in cells.

34. (Original) The method of claim 33, transferring the data comprises transferring the data arranged in asynchronous transfer mode (ATM) cells.

35. (Original) The method of claim 30, further comprising:  
providing an interface device having a plurality of ports; and  
providing a plurality of modems, wherein each pair of devices includes one of the ports  
and one of the modems.